



Project Implementation Report

(1 July 2022 – 30 June 2023)

Project Title:	Facility for Low Carbon Technology Deployment
GEF ID:	4927
UNIDO ID:	150188
GEF Replenishment Cycle:	<i>GEF-5</i>
Country(ies):	INDIA
Region:	<i>SA - Southeast Asia</i>
GEF Focal Area:	<i>Climate Change Mitigation (CCM)</i>
Integrated Approach Pilot (IAP) Programs ¹ :	<i>NA</i>
Stand-alone / Child Project:	<i>Stand Alone</i>
Implementing Department/Division:	<i>ENE / ESI</i>
Co-Implementing Agency:	
Executing Agency(ies):	Bureau of Energy Efficiency
Project Type:	<i>Full-Sized Project (FSP)</i>
Project Duration:	60 months
Extension(s):	<i>One</i>
GEF Project Financing:	USD 8,712,328
Agency Fee:	USD 827,672
Co-financing Amount:	USD 59,770,000
Date of CEO Endorsement/Approval:	12/23/2015 <i>Insert the date as per letter from GEF CEO</i>
UNIDO Approval Date:	9/15/2015 <i>Insert EB approval date of the project</i>
Actual Implementation Start:	1/1/2016 <i>Insert the PAD issuance date of the project</i>
Cumulative disbursement as of 30 June 2023:	USD 6,836,170.35
Mid-term Review (MTR) Date:	1/31/2020

¹ Only for **GEF-6 projects**, if applicable

	<i>IF applicable, insert expected/actual date of MTR submission to the GEF.</i>
Original Project Completion Date:	2/16/2021 <i>Insert the indicated project completion date as per CEO Approval / Endorsement document.</i>
Project Completion Date as reported in FY22:	2/16/2024 <i>Insert the project completion date as reported in the previous PIR for Fiscal Year 2022 (FY22)</i>
Current SAP Completion Date:	2/16/2024 <i>Insert the project completion date as currently seen in the system</i>
Expected Project Completion Date:	6/30/2025 <i>If the date is the same as above, please confirm; if you plan to extend the project completion date, please indicate here and elaborate further under section III.2</i>
Expected Terminal Evaluation (TE) Date:	5/1/2025 <i>Insert expected/actual date of TE submission to the GEF</i>
Expected Financial Closure Date:	12/31/2025 <i>Insert a date <u>no later than</u> 12 months after the TE submission date</i>
UNIDO Project Manager²:	Sanjaya Shrestha

I. Brief description of project and status overview

Project Objective		
To facilitate deployment and scaling up of low carbon technologies in India that can address technology gaps to mitigate climate change and promote use of energy efficiency and renewable energy technologies and systems in selected sectors.		
<i>Project Core Indicators</i>		<i>Expected at Endorsement/Approval stage</i>
1	Number of low-carbon technology innovation entries that meet the specifications of the challenges	Demonstration of approximately 120 low-carbon innovations that meet specifications of the challenges, at least 20-50% more efficient than the state-of-art available in the market.
2	Number of entities/industries where selected innovations have been commercially deployed	Commercially scaling up and deployment of approximately 40 winning technology innovations with stakeholder companies, industries and users.
3	Investment into low carbon technologies in the three technology areas due to increased interest in the project	None
4	Estimated tons of future GHG emissions reduction to be avoided due to deployment to market of energy efficiency technologies	Reduction of CO ₂ eq emissions of approximately 2.3 million tonnes over the 10-year lifetime

² Person responsible for report content

Baseline

The Indian economy grew at an average rate of 5% from 2009-2013. While growth has declined somewhat from its peak, GDP growth of 5-6% is projected to continue driven by population growth, latent demand and tremendous scope for productivity increases. India's power supply however relies on its domestic coal power plants (68% of power generation was by coal in 2010), whose efficiency levels are low and technical and nontechnical reasons have augmented the high transmission and distribution losses. In addition, the low electricity tariff has become a disincentive for investment in power supply. Meeting future demand will be even more challenging than before, as India faces escalating costs for developing conventional energy sources, depleting fossil fuel reserves, and an increasing mandate to address the local and global environmental and social impacts arising from the use of fossil fuels.

In recognition of this, the Government of India (GoI) has identified energy conservation as a critical instrument for meeting energy demand, and for achieving the national target of 20–25% reduction in carbon intensity from 2005 levels by 2020. Globally, energy-efficiency (EE) has been identified as the cheapest and most environmentally friendly way of bridging an electricity gap.

The GoI has enacted a variety of regulatory mandates and policy initiatives to unlock EE opportunities. The Energy Conservation Act of 2001 (amended in 2010) established the Bureau of Energy Efficiency to take the lead on the various EE initiatives. The National Mission for Enhanced Energy Efficiency (NMEEE), one of eight initiatives launched by India's 2008 National Action Plan for Climate Change (NAPCC), builds on the earlier policy objectives. The NMEEE introduced a number of new market-based and financial instruments aimed at accelerating the strategic deployment of energy-efficiency across India. By far, the largest of these NMEEE initiatives is the Perform, Achieve, and Trade (PAT) scheme, which has mandated energy-intensity targets for the country's most energy-intensive industrial sectors.

Overall, in the industrial sector in India, a significant number of interventions in the past for capacity building, awareness of energy efficiency has increased, however project development, technology benchmarking have not led to sufficient adoption of low carbon technologies and their replication. Therefore, a systematic approach involving a sustainable financing mechanism is required to demonstrate and scale up investments in the industrial sector.

The proposed project seeks to implement such an alternative approach: BEE, a public sector body under the Ministry of Power, tasked with the mandate to facilitate implementation of energy efficiency on a commercial basis, is the most suitably and strategically placed to fill in the gap at the implementation level.

While energy efficiency measures are the most efficient from an economic perspective, they face significant implementation barriers, including but not limited to lack of financing, weak or missing regulatory incentives, and lack of marketable technologies. While India has introduced significant policy and regulatory measures to overcome the financial and regulatory barriers, less has been done to identify measures to improve the rate of acquisition or development of innovative technologies. The enabling ecosystem for technology innovation is weak in India in general, and in the energy technology sector in particular. As a consequence, India is predominantly an importer of low carbon technologies.

To accelerate the pace of market development, several barriers need to be addressed. First, more human capital needs to be allocated towards energy-efficiency innovation. While India has extraordinary talent in science and technology, the intellectual resources that are dedicated towards solving energy-efficiency challenges are relatively limited. Due to the highly regulated nature of the energy industry, innovators have not been attracted to this field. Innovation activity is concentrated in fields with demonstrated high rates of growth and low government intervention, such as information technology, biotechnology, and textile manufacture. Potential innovators need the stimuli to direct their efforts towards energy-efficiency challenges.

Given the nature of the innovation process, GEF support is crucial to helping establish India's FLCTD, bringing international expertise and funding. The UNIDO will avail of its credentials in building institutions and capacities to establish the Facility, with the active cooperation of industry, government, academia and international partners. The Facility will also have the mandates to push for South-South cooperation and provide technology transfer services in countries with similar climatic conditions, where such technologies

can be quickly disseminated and adopted.

Please refer to the explanatory note at the end of the document and select corresponding ratings for the current reporting period, i.e. FY23. Please also provide a short justification for the selected ratings for FY23.

In view of the GEF Secretariat's intent to start following the ability of projects to adopt the concept of adaptive management³, Agencies are expected to closely monitor changes that occur from year to year and demonstrate that they are not simply implementing plans but modifying them in response to developments and circumstances or understanding. In order to facilitate with this assessment, please introduce the ratings as reported in the previous reporting cycle, i.e. FY22, in the last column.

Overall Ratings ⁴	FY23	FY22
Global Environmental Objectives (GEOs) / Development Objectives (DOs) Rating	<i>Satisfactory (S)</i>	<i>Satisfactory (S)</i>
<p><i>Using the progress rationale reported in section II, please briefly justify the selected FY23 GEOs/DOs ratings versus the GEOs/DOs ratings reported in FY22.</i></p> <p>18 innovation challenge competitions and 4 Low-carbon technology accelerator challenges were conducted under the FLCTD project. Altogether, 78 winners are selected under the innovation challenge and 67 startups received mentoring and technology support under the accelerator program. During the project period, 27 startups commercialised their low-carbon innovations.</p>		
Implementation Progress (IP) Rating	<i>Satisfactory (S)</i>	<i>Satisfactory (S)</i>
<p><i>Using the progress rationale reported in section II, please briefly justify the selected FY23 IP ratings versus the IP ratings reported in FY22.</i></p> <p>During the reporting period of FY23, 18 winners were selected from the innovation challenge for financial support to validate their technologies, and 23 startups completed the low-carbon accelerator program. 12 innovation challenge winners of previous years have completed technology validation.</p>		
Overall Risk Rating	<i>Low Risk (L)</i>	<i>Low Risk (L)</i>
<p><i>Using the progress rationale reported in section II and III, please briefly justify the selected FY23 risk rating versus the risk ratings reported in FY22.</i></p> <p>All project activities are being carried out as planned for both components of the project and the overall risks are being mitigated by adaptive management during the project implementation.</p>		

II. Targeted results and progress to-date

³ Adaptive management in the context of an intentional approach to decision-making and adjustments in response to new available information, evidence gathered from monitoring, evaluation or research, and experience acquired from implementation, to ensure that the goals of the activity are being reached efficiently

⁴ Please refer to the explanatory note at the end of the document and assure that the indicated ratings correspond to the narrative of the report

Please describe the progress made in achieving the outputs against key performance indicator's targets in the project's **M&E Plan/Log-Frame at the time of CEO Endorsement/Approval**. Please expand the table as needed.

Please fill in the below table or make a reference to any supporting documents that may be submitted as annexes to this report.

Project Strategy	KPIs/Indicators	Baseline	Target level	Progress in FY23
Component 1 –1. Innovation Ecosystem for selecting technology innovators and instituting competitive awards and policy incentives				
Outcome 1: Collaboration between government agencies, industry, innovators, the research community, financing institutions, and technology experts in the field of innovative low carbon technologies strengthened.				
Output 1.1: Expert Panels instituted for three selected technology areas	Number of challenge competitions that are with at least two winning entries for each area meeting the technical specifications	0	Create approximately 20 challenge competitions that are able to attract at least two winning entries for each area, meeting the technical specifications)	<p>Expert Panels were constituted for six technology areas, and 16 subject experts were engaged during the reporting period. (Annexure: Expert Panel Members)</p> <p>During the reporting period, 6 challenge competitions were conducted under six technology areas - (i) Space Conditioning, (ii) Pumps Pumping system and Motors, (iii) Waste Heat Recovery and Thermal Efficiency, (iv) Industrial Resource Efficiency and Circular Economy, (v) Industrial IoT, and (vi) Electrical Energy Storage Systems.</p> <p>18 winners are identified by the expert panel to provide financial support for technology validation during the reporting period.</p>
Output 1.2: Twenty challenge competitions conducted	Number of entities (Challenge winners) that accessed technical and advisory services under the project (gender-disaggregated)	0	Complete challenge cycle, from identification to announcement and testing, in 12 to 18 months.	<p>FLCTD innovation challenge competition for 6 technology verticals and the 4th low-carbon technology accelerator cohort were conducted under the FLCTD project in the reporting period.</p> <p>18 winners are identified by the expert panel to provide financial support for technology validation during the reporting period.</p> <p>23 startups were selected to participate in the Low-carbon accelerator cohort.</p>
Output 1.3 : Financial institutions revalidated in the inception phase and engaged to manage the funds and provide debt and	Number of Financial Institutions that provide debt and equity to the participating entities.	0	At least 3 Financial Institutions identified that provide debt and equity to the	<p>Background:</p> <ul style="list-style-type: none"> - Intelicap Advisory Services Private Limited has been selected through a competitive bidding process to provide financial due diligence and fund-raising support

equity to the participating entities.			participating entries	<p>to the winners of innovation challenges held between 2019 to 2021 to accelerate the commercialisation of low-carbon technologies.</p> <p>Update:</p> <ul style="list-style-type: none"> - During the reporting period, Intelicap engaged with 11 FLCTD winners, and prepared “Enterprise Development Plan” (EDP) for eight winners that had completed technology validation and are ready for commercialization. - 3 Equity and 3 Debt investors have been identified and invited for the “Investor connect and networking session” with FLCTD winners to be held in Mumbai in July 2023.
---------------------------------------	--	--	-----------------------	---

- Outcome 2: Adoption of improved low-carbon technologies in the Indian economy, that would include reduced need for new energy generation capacity

Output 1.2.1: Targetted innovation and technology development to meet identified low carbon technology needs awarded	Allocation of awards to winners in trenches (gender-disaggregated)		Allocation of awards to winners in tranches- 50% success in innovation challenge, 30% meeting deployment-linked milestones, 20% legal and technical services for winning prototypes	<p>Background:</p> <p>Based on the recommendations and approval of the Project Steering Committee at the 5th PSC meeting (2020), the award to winners will be disbursed as per four progress-based milestones. These are:</p> <ul style="list-style-type: none"> • 20% on receipt of the implementation plan by the Winner after contract signing, and submission of the Inception Report. • 30% on completion and acceptance of 1st set of field trials. • 35% on completion and acceptance of balance field trial. • 15% on receipt of the final M&V report. <p>Update:</p> <p>18 new winners were identified in the reporting period, and BEE (Gov of India) provided endorsement to award contract to the 18 winners for financial support for technology validation. The funds will be disbursed in four tranches stated in the background.</p>
--	--	--	---	---

Output 1.2.2: Approximately 120 low carbon innovations demonstrated	Number of entities participating in the competitions. Number of commercially deployed carbon technology prototypes	0	Demonstration of around 120 low-carbon innovations that meet specifications of the challenges, at least 20-50% more efficient than the state-of-art available in the market, and 40 winning technology innovations	During the reporting period: <ul style="list-style-type: none"> - 15 innovation challenge winners completed technology validation during the reporting period. - 7 technologies of innovation challenge winners are commercially deployed following the technology validation under the FLCTD project. - 3 FLCTD innovation challenge winners received Bureau of Energy Efficiency's 'National Energy Conservation Award' in December 2022 for demonstrating significant energy savings in the waste heat recovery area. - The 4th low-carbon accelerator cohort concluded in December 2022. 19 start-ups successfully graduated at the Demo Day and Finale held on March 10, 2023 in New Delhi. (Annexure: Low-carbon Accelerator Compendium.)
--	---	---	--	--

Component 2 – Technical assistance for Technology Transfer Support Facility

Outcome 1: Establishment of deployment support eco-system for low carbon climate mitigation technologies

Output 2.1: Appropriate networks and centres for research and deployment of low-carbon technologies verified.	Number of networks and centres for research and deployment identified	None	5-10	<p>Background:</p> <ul style="list-style-type: none"> - DST – Centre for Policy Research, Panjab University, Chandigarh has been engaged to conduct the study of “Technology transfer centres to increase commercialization of innovation”. <p>Update:</p> <ul style="list-style-type: none"> - The DST – CPR study identified 25 higher education and research institutions for in-person visits to understand and verify the functioning of the national tech-transfer ecosystem. - 5-10 centres are to be finalised for receiving further capacity building support.
Output: 2.2: Technology Transfer Support Facility established	Technology Transfer Support Facility is established	None	Technology Transfer Support Facility becomes fully operational At least 5 consultations / workshops held to promote participatory and	<ul style="list-style-type: none"> - Consultations with 25 technology transfer centres and offices in higher education institutes and national research laboratories were carried out to identify the training needs and to develop a targeted training programme for tech transfer.

			inclusive approach	
Output 2.3: Consultations/ workshops with international/ national experts, with documentation and dissemination of the Facility carried out	Number of consultations held to promote participatory and inclusive approach			Activities will be carried in the forthcoming reporting period.

III. Project Risk Management

1. Please indicate the overall project-level risks and the related risk management measures: (i) as identified in the CEO Endorsement document, and (ii) progress to-date. Please expand the table as needed.

Describe in tabular form the risks observed and priority mitigation activities undertaken during the reporting period in line with the project document. Note that risks, risk level and mitigations measures should be consistent with the ones identified in the CEO Endorsement/Approval document. Please also consider the project's ability to adopt the adaptive management approach in remediating any of the risks that had been sub-optimally rated (H, S) in the previous reporting cycle.

	(i) Risks at CEO stage	(i) Risk level FY 22	(i) Risk level FY 23	(i) Mitigation measures	(ii) Progress to-date	New defined risk ⁵
1	Political risk: Changes in government priorities resulting in reduced support for the project, delays in activities and overall ineffectiveness of the interventions	Low risk (L)	Low risk (L)	The project seeks to facilitate deployment of low carbon technologies in India that can address technology gaps to mitigate climate change and improve the energy efficiency in selected sectors. The low carbon technology interventions are considered a high priority of the Government. Thus, the risk of a drastic change is unlikely. To mitigate this risk the Project Steering Committee will be closely involved in the project's activities, giving guidance and advice throughout the identification, selection, and intervention processes.	- UNIDO is working closely with the Bureau of Energy Efficiency and providing monthly progress updates. Additionally, a quarterly progress review is carried out with BEE to highlight issues in project implementation. To mitigate this risk the Project Steering Committee is closely involved in the Project's activities, giving guidance and advice throughout the identification, selection, and intervention processes.	<input type="checkbox"/>
2	Technical risk: Lack of energy savings from deployment of efficient technologies	Low Risk (L)	Low Risk (L)	The project builds upon the work done in the past where such technologies have been identified based on field studies and cluster level energy audits. Moreover, the demonstration projects to be conducted using the GEF grant will ensure that only those technologies where the technical performance risk is	- The project has developed a rigorous selection criterion which is referred by the expert panel members to select the innovations which exhibit potential for energy saving and greenhouse gas reduction. The project has developed a measurement and verification procedure which validates the	<input type="checkbox"/>

⁵ New risk added in reporting period. Check only if applicable.

				minimal are taken up. UNIDO and BEE will ensure this by leveraging technical expertise from all stakeholders, including industry, government and others.	energy saving and greenhouse gas reduction and the potential of reduction due to replication.	
3	Sustainability risk: The risks envisaged here include inability to scale up implementation and lack of financing beyond the project period	Low risk (L)	Low risk (L)	BEE has committed financial resources to ensure that replication occurs beyond the project's implementation period. The Technology Transfer Support Facility will be established in close coordination with a financial institution, which will also ensure that the best practices of project design and implementation are replicated in other clusters	A study of the technology transfer centers in India was conducted to identify key gaps and constraints in the functioning of these centers. Further project activities to support the establishment of TTSTF will be planned based on the findings of this study.	<input type="checkbox"/>
4	Financial risk: The risk of non-payment for investments made by EESL/ESCOs	Moderate risk (M)	Moderate risk (M)	UNIDO and BEE will not only provide training to industries for building their capacity on the long-term financial benefits of investing in energy efficiency, but the project will also leverage risk mitigation measures that are being set up by BEE, such as the Partial Risk Guarantee Fund under NMEEE.	The project engaged Intellectcap Advisory Services to provide financial due-diligence support to start-ups supported under FLCTD, to enable them to raise equity/debt from the markets.	<input type="checkbox"/>
5	Climate change risk: The project is not subject to any climate change risks.	NA	NA	While no climate changes risks are foreseen, the project will mitigate any potential risks to project demonstration sites by including criteria related to such risks in the cluster surveys, and if a risk is identified, develop a mitigation strategy before implementation begins.	NA	<input type="checkbox"/>
6	Social and Gender Risk:	Moderate risk (M)	Moderate risk (M)	Risk of resistance against, or lack of interest in, the project activities from stakeholders, especially with regard to the active promotion of gender equality. Low participation rates of suitable female candidates due to lack of interest, inadequate project activity or missing qualified female population within engineering sector. This Project will pursue thorough and gender responsive communication and ensure stakeholder involvement at all levels, with special regard to involving women and men, as well as CSOs and NGOs promoting GEEW, and a gender expert. This shall mitigate social and gender related risks,	<ul style="list-style-type: none"> - The Project is pursuing gender responsive communication and ensure stakeholder involvement at all levels, particularly with regards to involving women in all its initiatives. - The accelerator cohorts provided support to 17 start-ups with woman co-founders. The program also had 13 women mentors to help the start-ups throughout the program. - 6 startups with woman co-founders from the 5th Innovation Challenge are supported under the FLCTD project in the reporting period. 	

				promote gender equality, create a culture of mutual acceptance, and maximize the potential contribution of the project to improving gender equality in the energy field.		
--	--	--	--	--	--	--

2. If the project received a **sub-optimal risk rating (H, S)** in the previous reporting period, please state the **actions taken** since then to mitigate the relevant risks and improve the related risk rating. Please also elaborate on reasons that may have impeded any of the sub-optimal risk ratings from improving in the current reporting cycle; please indicate actions planned for the next reporting cycle to remediate this.

Not applicable

3. Please indicate any implication of the **COVID-19** pandemic on the progress of the project.

- Most of the industries stopped operations due to the 1st wave in March 2020, therefore, some of the ongoing and new field trials deployments of innovations were delayed. Due to business uncertainty resulting from the 2nd wave in 2021, few industries declined to permit field-trial at their facilities.
- The application review, screening, scoring and selection by the expert panel members had to be made online, which had to be developed, integrated into the project website which caused a 3-month delay. Because of travel restrictions imposed by Government of India and various state governments in 2020 and in 2021, inter-state and inter-city travel were affected. The PMU could not visit industries for on-site due-diligence thereby delaying the contract award by over 6 months. Performance validation (M&V) of the innovations have been delayed by additional 6 months due to 2nd wave in April 2021.
- The resulting delay has caused reorganizing field trials with new partners that consumed additional time - new industrial sites could be identified in the second half of 2021 delaying the field trials by over 15 months.

4. Please clarify if the project is facing delays and is expected to request an **extension**.

Yes, project partners faced delays in the implementation of various activities due to restrictions in place due to COVID-19 from March 2020 to January 2022 during subsequent waves of the pandemic. FLCTD project would require a minimum period of 15 months extension because of delays caused by the pandemic. Additionally, in the 7th Project Steering Committee (PSC) meeting held on April 25, 2023, the PSC agreed that a no-cost extension be granted till June 30, 2025.
(Annexure: Minutes of 7th PSC meeting).

5. Please provide the **main findings and recommendations of completed MTR**, and elaborate on any actions taken towards the recommendations included in the report.

Recommendation 1 (to the PMU and PSC): Review the FLCTD Project Results Framework (PRF) with the intention of revising it, and re-defining the outputs of Components 1 and 2 with SMART indicators and targets that can be used for M&E activities for the remainder of FLCTD.

Recommendation 2 (to PMU and PSC): Revise the design of Component 2 for the technical assistance towards a technology transfer support facility (TTSF).

Recommendation 3 (to PMU, UNIDO and BEE): Manage FLCTD with much more administrative flexibility and urgency since it is an innovation project with inherent risks to outcomes to all of its investments. This, importantly, would include streamlining the approval time for FLCTD grant support for demonstrations.

Recommendation 4 (PSC, UNIDO and BEE): Set up mechanisms for additional funding and technical assistance for strengthening of results of high replication demos

Recommendation 5 (PSC, UNIDO and BEE): Approve greater roles of importance to expert panel members and financial advisors.

Recommendation 6 (UNIDO and BEE): Approach the addition of more technology verticals by holding stakeholder consultations to identify and select which technology verticals have the most potential for innovation and benefits

Recommendation 7 (PSC, UNIDO and BEE): Engage convenor and panel experts as paid positions as soon as possible to conduct mandatory peer reviews of each demo project.

Recommendation 8 (PSC, UNIDO and BEE): Consider additional flexibilities in grant conditions as a measure of increasing effectiveness of grant funds into successful technologies for replication and scale-up

Recommendation 9 (UNIDO): Increase the size of the PMU to manage the increased pace of grant approvals for technology demonstrations.

Recommendation 10 (UNIDO, BEE and PMU): Institute regular meetings between NPD and UNIDO reps (PMU and UNIDO rep) on a quarterly basis.

Recommendation 11 (PMU): Improve the website to provide a dashboard of FLCTD progress on key performance indicators with restricted access to BEE, PMU and CII

Recommendation 12 (PMU): Improve application quality to include mandatory disclosure of energy and GHG impact of innovation

Recommendation 13 (PSC, UNIDO and BEE): Expand PSC membership to include more stakeholders who can promote and support low carbon innovation

Recommendation 14 (PSC, UNIDO and BEE): Intensify outreach to other partners in an effort to institutionalize the industry-innovator-government-financing institute interface.

Recommendation 15 (PSC, UNIDO and BEE): Strengthen gender mainstreaming activities of FLCTD

Recommendation 16 (to PMU and GEF): Prepare request for a 3.5-year extension of FLCTD from 5 January 2021 to 5 July 2024 that can provide FLCTD with a reasonable timeframe to reach 120 innovation demonstrations and exhaustion of the GEF grant.

Actions have been taken on all the recommendations and reported in the 5th Project Steering Committee Meeting held on 27th October 2020.

IV. Environmental and Social Safeguards (ESS)

1. As part of the requirements for **projects from GEF-6 onwards**, and based on the screening as per the UNIDO Environmental and Social Safeguards Policies and Procedures (ESSPP), which category is the project?

- ☐ Category A project
- ☐ Category B project
- ☐ Category C project

(By selecting Category C, I confirm that the E&S risks of the project have not escalated to Category A or B).

Notes on new risks:

- *If new risks have been identified during implementation due to changes in, i.e. project design or context, these should also be listed in (ii) below.*
- *If these new/additional risks are related to Operational Safeguards # 2, 3, 5, 6, or 8, please consult with UNIDO GEF Coordination to discuss next steps.*
- *Please refer to the UNIDO [Environmental and Social Safeguards Policies and Procedures](#) (ESSPP) on how to report on E&S issues.*

Please expand the table as needed.

	E&S risk	Mitigation measures undertaken during the reporting period	Monitoring methods and procedures used in the reporting period
(i) Risks identified in ESMP at time of CEO Endorsement	NA	NA	NA
(ii) New risks identified during project implementation (if not applicable, please insert 'NA' in each box)	NA	NA	NA

V. Stakeholder Engagement

1. Using the previous reporting period as a basis, please provide information on **progress, challenges and outcomes** regarding engagement of stakeholders in the project (based on the Stakeholder Engagement Plan or equivalent document submitted at CEO Endorsement/Approval).

<p><u>Project Component 1: Innovation Ecosystem for selecting technology innovators</u></p> <ul style="list-style-type: none"> • Under the 5th Innovation Challenge, application screening, and shortlisting were held between July and November 2022. The expert panels comprising sectoral experts, the Bureau of Energy Efficiency (BEE), Customised Energy Solutions (CES), and CII-GBC selected 65 applications from the six technology verticals for final presentations. Following the final presentations and subsequent due diligence, 18 winners were selected. • Based on the approval received from BEE on the ToR to engage a firm for the component 2 study "Technology transfer centres to increase commercialization of innovation", the Procurement unit contracted DST-CPR Panjab University to carry out the project in August 2022. • The FLCTD low-carbon accelerator cohort 4.0 was launched in July 2022. Two interactive ask-me-anything sessions were organized for the benefit of potential applicants of the 4th cohort. The session on 5th August 2022 focused on mentor interaction and the session on 16th August 2022 focused on encouraging women innovators to the program. 245 applications were received, out of which the PMU and implementing partner AIC-Sangam Ventures selected 23 startups for the programme.

- PMU and implementing partner Intellect Advisory Services Pvt. Ltd. met with 12 FLCTD winners to discuss the financial and commercialisation plans, out of which 9 EDPs were finalised.

Project Component 2: Technical Assistance for Technology Transfer Support Facility

The study on “Technology Transfer and Commercialization Centers in India” is being carried out by DST-Center for Policy Research, Panjab University. The PMU along with DST-CPR visited 25 technology transfer offices in higher education institutes and research laboratories to understand the functioning of these Centers. (Annexure: List of TTOs visited).

2. Please provide any feedback submitted by national counterparts, GEF OFP, co-financiers, and other partners/stakeholders of the project (e.g. private sector, CSOs, NGOs, etc.).

- GEF-OFP from MoEFCC and PMU visited Bengaluru in June 2023 to review the progress of technology demonstrations of Uravu Labs Pvt. Ltd., Impensus Electronics Pvt. Ltd., and New Leaf Dynamic Technologies Pvt. Ltd.
- Feedback from project partner - CII-GBC
 - Meetings need to be held with major local industry associations and major key industries related to the innovation challenges to make them aware of the innovation challenges and overall project.
 - The constant handholding and funding support from CII, UNIDO, and expert panel members respectively, helped the innovators to improve their innovations to suit the field conditions and this programme provided a platform to bring innovations to the markets for scale-up of the technology.
 - The findings of M&V should be shared via a series of webinars to the relevant stakeholders/sectors to promote the technology at larger scale.
- Feedback from the project partner managing Accelerator Programme - Sangam Ventures
 - The overall feedback on the programme was positive. This programme provided a good learning experience to all the start-ups that were part of the four low-carbon accelerator cohorts. As per the start-ups’ responses, the programme sessions were rated well.
 - Start-ups found the content of the sessions relevant and valuable for their start-up. The start-ups also gave positive feedback on the programme execution and coordination.
 - One-on-one sessions with the start-ups were helpful to identify the needs of entrepreneurs and involving mentors and experts from the network. This gave great value to the program since the enterprises were quite diverse, and it was a learning experience even for the Sangam team to cater to the start-up’s individual needs.

3. Please provide any **relevant stakeholder consultation** documents.

1. 4927 – Minutes of the Meeting, 7th PSC meeting
2. 4927 – FLCTD Powerpoint presentation of the 7th PSC meeting
3. 4927 – Minutes of the Meeting, FLCTD project review meeting - BEE
4. 4927 – List of FLCTD Innovation Challenge Expert Panel Members
5. 4927 - CES Progress Report FLCTD
6. 4927 - Sangam Capital Advisors – Closure Report
7. 4927 – FLCTD Annual Progress Report (submitted to BEE)
8. 4927 - CII – Progress Report
9. 4927 – List of Technology Transfer Offices (TTO)
10. 4927 – Questionnaire for TTO (Component 2 Study)
11. 4927 - ToR for 6th FLCTD Innovation Challenge

VI. Gender Mainstreaming

1. Using the previous reporting period as a basis, please report on the **progress** achieved **on implementing gender-responsive measures** and **using gender-sensitive indicators**, as documented at CEO Endorsement/Approval (in the project results framework, gender action plan or equivalent),

Realizing the need to encourage and bring women entrepreneurs into the low-carbon/clean technology space, efforts were made during the announcement of the call for applications for the FLCTD Accelerator and 2022 Innovation Challenge in the outreach efforts.

Special attention was given to and selection process to bring women entrepreneurs into the accelerator program to ensure they have equal access to information and knowledge for making their start-ups successful.

During the reporting period, the project through the 4th accelerator cohort onboarded 5 start-ups with woman co-founders to provide mentoring support, and in the 5th innovation challenge, 4 women-led startups are being provided financial support for technology trial and validation.

VII. Knowledge Management

1. Using the previous reporting period as a basis, please elaborate on any **knowledge management activities / products**, as documented at CEO Endorsement / Approval.

FLCTD website (www.low-carbon-innovation.org) was updated with information/details of the Innovation Challenge 2022 Winners, the Accelerator program, and the Component 2 Study.

2. Please list any **relevant knowledge management mechanisms / tools** that the project has generated.

- FLCTD Website (www.low-carbon-innovation.org) acts as a knowledge portal regarding all information on the project.
- For publicity and awareness creation, the following is the Social Media link of the FLCTD project:
<https://www.linkedin.com/company/flctd/>
- 4927 FLCTD Low-carbon technology innovations Compendium
- 4927 FLCTD Factsheet

VIII. Implementation progress

1. Using the previous reporting period as a basis, please provide information on **progress, challenges and outcomes achieved/observed** with regards to project implementation.

- 12 winners completed technology trials and validated the innovations that were selected in 2019, 2020 and 2021 innovation challenges.
- Under the 5th Innovation Challenge, 205 applications were submitted out of which 65 applicants were shortlisted, and in a three-stage selection process 18 applications under 6 verticals were selected as winners. Due diligence visits were carried out by expert panel members, CII-GBC and PMU to discuss and finalize the financial assistance for technology trials.

- The 4th cohort of the FLCTD Accelerator program received 246 applications, and launched with 23 start-ups on 13th September 2022 and concluded in December 2022. The finale of the 4th cohort and the concluding event of the low-carbon technology accelerator program was organized on the 9th & 10th of March 2023 in New Delhi.
- The PMU initiated the work under component-2 with the Department of Science and Technology's Center for Policy Research (DST-CPR) based in Chandigarh, to conduct a study - 'Technology transfer centers to increase commercialization of innovation'. Out of the 524 offices identified through a desk-research of their tech transfer and commercialization activities, DST – CPR developed shortlisting criteria and prepared a long list of 56 centers where Technology transfer is one of the primary activities. 25 of these centers in higher educational institutions and national research laboratories were visited for in-person consultations.
- Intellect Advisory Services is providing financial due diligence and fund-raising support to 12 selected enterprises that have completed technology validation. As part of the exercise, the Intellect team has conducted detailed discussions with the entrepreneurs to assess their baseline and funding requirements. Based on this analysis, detailed 15-month roadmap was prepared in the form of a customised Enterprise Development Plan for 9 shortlisted enterprises.
- The Annual Project review of the FLCTD project was held on 13th February 2023, under the Chairmanship of the Director General, Bureau of Energy Efficiency.
- The 7th meeting of the Project Steering Committee (PSC) for the FLCTD Project was held on 25 April 2023, under the Chairmanship of the Director General, Bureau of Energy Efficiency.
- FLCTD website (www.low-carbon-innovation.org) was updated with information/details of the Innovation Challenge 2022 Winners, the Accelerator program, and the Component 2 Study.

2. Please briefly elaborate on any **minor amendments⁶ to the approved project that may have been introduced during the implementation period or indicate as not applicable (NA).**

Please tick each category for which a change has occurred and provide a description of the change in the related textbox. You may attach supporting documentation, as appropriate.

<input type="checkbox"/>	Results Framework	
<input type="checkbox"/>	Components and Cost	
<input type="checkbox"/>	Institutional and Implementation Arrangements	
<input type="checkbox"/>	Financial Management	
<input type="checkbox"/>	Implementation Schedule	
<input type="checkbox"/>	Executing Entity	
<input type="checkbox"/>	Executing Entity Category	
<input type="checkbox"/>	Minor Project Objective Change	
<input type="checkbox"/>	Safeguards	
<input type="checkbox"/>	Risk Analysis	
<input type="checkbox"/>	Increase of GEF Project Financing Up to 5%	
<input type="checkbox"/>	Co-Financing	
<input type="checkbox"/>	Location of Project Activities	

⁶ As described in Annex 9 of the *GEF Project and Program Cycle Policy Guidelines*, **minor amendments** are changes to the project design or implementation that do not have significant impact on the project objectives or scope, or an increase of the GEF project financing up to 5%.

<input type="checkbox"/>	Others	
--------------------------	--------	--

3. Please provide progress related to the **financial implementation** of the project.

Project Delivery Report Attached

IX. Work Plan and Budget

1. Please provide **an updated project work plan and budget** for the remaining duration of the project, as per last approved project extension. Please expand/modify the table as needed.

Please fill in the below table or make a reference to a file, in case it is submitted as an annex to the report.

Outputs by Project Component	2023				2024				2025				GEF Grant Budget Available (US\$)	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Component 1 – Innovation Ecosystem for selecting technology innovators and instituting competitive awards and policy incentives														
Outcome 1.1: Innovation Ecosystem for selecting technology innovators and instituting competitive awards and policy incentives														
Output 1.1.1: Expert Panels instituted for selected technology areas	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12053	
Output 1.1.2: Twenty Challenge competitions conducted	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	250000	
Output 1.1.3: Financial Institutions revalidated	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	150000	
Outcome 1.2: Adoption of improved low-carbon technologies in the Indian economy, that would include reduced need for new energy generation capacity														
Output 1.2.1: Targeted innovation and technology development to meet identified low-carbon technology needs awarded.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	450000	
Output 1.2.2: Approximately 120 low carbon innovations demonstrated	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	260022	
Component 2 – Technical assistance for Technology Transfer Support Facility														
Outcome 2.1: Establishment of deployment support eco-system for low carbon climate mitigation technologies														
Output 2.1.1: Appropriate networks and centres for research and deployment of low-carbon technologies verified.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	210000	
Output 2.1.2: Technology Transfer Support Facility established	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	314656	

Component 3 – Monitoring and Evaluation													
Outcome 3: Monitoring and evaluation mechanisms and indicators established to facilitate successful project implementation and sound impact assessment.													
Output 3.1: Regular monitoring exercises conducted;	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	107595
Output 3.2: Midterm and final evaluation conducted.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100000

X. Synergies

1. Synergies achieved:

NA

3. Stories to be shared (Optional)

NA.

XI. GEO LOCATION INFORMATION

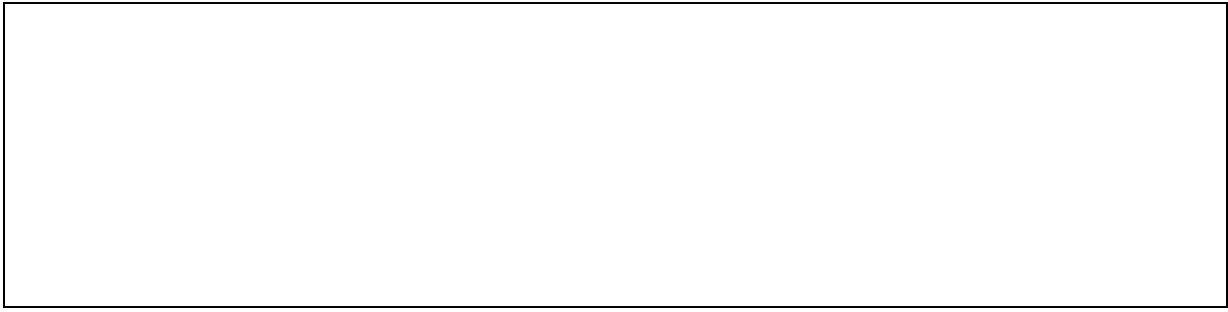
The Location Name, Latitude and Longitude are required fields insofar as an Agency chooses to enter a project location under the set format. The Geo Name ID is required in instances where the location is not exact, such as in the case of a city, as opposed to the exact site of a physical infrastructure. The Location & Activity Description fields are optional. Project longitude and latitude must follow the Decimal Degrees WGS84 format and Agencies are encouraged to use at least four decimal points for greater accuracy. Users may add as many locations as appropriate.

Web mapping applications such as [OpenStreetMap](#) or [GeoNames](#) use this format. Consider using a conversion tool as needed, such as: <https://coordinates-converter.com>

Please see the Geocoding User Guide by clicking [here](#)

Location Name	Latitude	Longitude	Geo Name ID	Location and Activity Description
India	20.59	78.96		

Please provide any further geo-referenced information and map where the project interventions is taking place as appropriate.



EXPLANATORY NOTE

1. **Timing & duration:** Each report covers a twelve-month period, i.e. 1 July 2022 – 30 June 2023.
2. **Responsibility:** The responsibility for preparing the report lies with the project manager in consultation with the Division Chief and Director.
3. **Evaluation:** For the report to be used effectively as a tool for annual self-evaluation, project counterparts need to be fully involved. The (main) counterpart can provide any additional information considered essential, including a simple rating of project progress.
4. **Results-based management:** The annual project/programme progress reports are required by the RBM programme component focal points to obtain information on outcomes observed.

Global Environmental Objectives (GEOs) / Development Objectives (DOs) ratings	
Highly Satisfactory (HS)	Project is expected to achieve or exceed <u>all</u> its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. The project can be presented as "good practice".
Satisfactory (S)	Project is expected to <u>achieve most</u> of its <u>major</u> global environmental objectives, and yields satisfactory global environmental benefits, with only minor shortcomings.
Moderately Satisfactory (MS)	Project is expected to <u>achieve most</u> of its major <u>relevant</u> objectives but with either significant shortcomings or modes overall relevance. Project is expected not to achieve some of its major global environmental objectives or yield some of the expected global environmental benefits.
Moderately Unsatisfactory (MU)	Project is expected to achieve <u>some</u> of its major global environmental objectives with major shortcomings or is expected to <u>achieve only some</u> of its major global environmental objectives.
Unsatisfactory (U)	Project is expected <u>not</u> to achieve <u>most</u> of its major global environmental objectives or to yield any satisfactory global environmental benefits.
Highly Unsatisfactory (HU)	The project has failed to achieve, and is not expected to achieve, <u>any</u> of its major global environmental objectives with no worthwhile benefits.

Implementation Progress (IP)	
Highly Satisfactory (HS)	Implementation of <u>all</u> components is in substantial compliance with the original/formally revised implementation plan for the project. The project can be presented as "good practice".
Satisfactory (S)	Implementation of <u>most</u> components is in substantial compliance with the original/formally revised plan except for only few that are subject to remedial action.
Moderately Satisfactory (MS)	Implementation of <u>some</u> components is in substantial compliance with the original/formally revised plan with some components requiring remedial action.
Moderately Unsatisfactory (MU)	Implementation of <u>some</u> components is <u>not</u> in substantial compliance with the original/formally revised plan with most components requiring remedial action.
Unsatisfactory (U)	Implementation of <u>most</u> components in <u>not</u> in substantial compliance with the original/formally revised plan.
Highly Unsatisfactory (HU)	Implementation of <u>none</u> of the components is in substantial compliance with the original/formally revised plan.

Risk ratings	
Risk ratings will assess the overall risk of factors internal or external to the project which may affect implementation or prospects for achieving project objectives. Risk of projects should be rated on the following scale:	
High Risk (H)	There is a probability of greater than 75% that assumptions may fail to hold or materialize, and/or the project may face high risks.
Substantial Risk (S)	There is a probability of between 51% and 75% that assumptions may fail to hold or materialize, and/or the project may face substantial risks.
Moderate Risk (M)	There is a probability of between 26% and 50% that assumptions may fail to hold or materialize, and/or the project may face only moderate risk.
Low Risk (L)	There is a probability of up to 25% that assumptions may fail to hold or materialize, and/or the project may face only low risks.